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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/757,757 | 01/14/2004 | Steven Maddocks | 200315416-1 | 4254 |
| 22879 7590 01/11/2008 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400 | | | EXAMINER PEYTON, TAMMARA R | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2182 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/757,757

Applicant(s)

MADDOCKS ET AL.

Examiner

Tammara R. Peyton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-18, 21, 22 and 24-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-18, 21, 22 and 24-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-17, 25, 26, 28, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dimitroff, (US 6,212,606) and Murotani et al., (US 6,779,078).

As per claims 12, 13, 25, 32, 33, Dimitroff teaches an interface manager for use in a storage system, comprising: at least a first port (Fig. 1) to communicate with controllers (device controllers, 112, 114, Fig.2, col. 2, lines 35-55) operatively associated with storage system devices (118, Fig. 1) of the storage system; at least one network port (Fig. 1, col. Col. 2, lines 28-33) to communicate with a host (106, Fig. 1) external to the storage system; and at least one control (part of the host) element to: receive device information from the controllers, generate at least one logical map (of the devices connected on the network and each devices share-ability) based on the received device information, and assign the at least one logical map to the host to allow the host

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to access one or more of the storage system devices. (col. 2, lines 57– col. 5, lines 1-67)

Dimitroff teaches a system wherein security and access parameters (col.3, lines 34-54, col. 4, lines 6-67, and col. 5, lines 1-60) perform the action as a logical map by enabling and disabling user access of system devices. However, Dimitroff does not expressly teach the use of an interface manager that receives device information from a plurality of controllers and generates a logical map of the storage system.

Nonetheless, Murotani teaches an external manager 5, that communicates with two or more disk array controllers (2-4, Fig. 1), gathers and manages the access data and the configuration data relating to the physical drives and logical volumes of each disk array controller. Furthermore, Murotani teaches of a host unit 1 that executes two or more applications and disk array controllers (2-4) are connected to the host via a Fabric Switch 6 through a Fibre Channel. The external manager specifically teaches of gathering accessing state, which is the number of read/write commands for each application of the host unit 1 during a predetermined period and compiling access data managed by each of the disk controllers. (col. 3, lines 3 - col. 6, lines 1-60) It would have been obvious to one of ordinary skill that the external manager perform the action as a logical map by enabling and disabling user access of system devices by retaining corresponding information about applications 17 to 19 on host unit 1 and on disk array controllers 2 to 4 which control the logical volumes.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of both the Dimitroff and Murotani references into a single embodiment because both systems teach an overview of a storage area network based on a Fibre Channel standard having a plurality of applications in one or more host units share volume groups, and the volume groups to which the applications on the host units execute input and output extend over two or more disk/storage controllers; and, the external manager of Murotani would allow Dimitroff to properly handle the requests from a host's application and the logical volumes that are the access targets of the applications from external disk array controllers which control the logical volumes.

As per claims 14-17, and 28, Dimitroff teaches propagating management commands, routing and formatting transactions, and scheduling access for the host and device controllers via a plurality of distinct parameters of the storage devices wherein the distinct parameters comprises a security parametric, an access parametric, an availability parametric, an ownership parametric, and a management parametric.

As per claim 26, Dimitroff teaches wherein the received device information includes at least one of numbers and types of storage system devices connected to the controllers, and capacities of storage system devices in the storage system.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 21, 22, 24, 27, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dimitroff, (US 6,212,606) and Murotani et al., (US 6,779,078) and in further view of and Yung et al., (US 2004/0032430A1).

As per claims 18, 21, 22, 24, 27, and 29-31, Dimitroff teaches a storage network comprising:

an automated storage system including data access drives and the interface manager to generate a logical map of the automated storage system based on aggregating configuration information for the data access drives and a device manager to communicate with the plurality of interface controllers. Murotani teaches an external manager 5, which communicates with two or more disk

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array controllers (2-4, Fig. 1), gathers and manages the access data and the configuration data relating to the physical drives and logical volumes of each disk array controller. However, Dimitroff and Murotani are both silent in respect to the at least one control element includes a management application program interface (API) to generate management commands for the controllers and wherein the management API schedules access to data access drives and transfer robotics.

Nonetheless, Yung teaches a plurality of interface controllers operatively associated with the data access drives and transfer robotics (Yung, [0008, 0011-0014, and 0037]; an interface manager communicatively coupled to each of the plurality of interface controllers, a storage system based on aggregating configuration information for the data access drives and transfer robotics; [0011-0014, 0055, and 0071, 0072]) and a pipeline [0049, 0050] provided as computer readable program code in computer-readable storage at the interface manager, the pipeline including: a command router to format transactions for the interface controllers; a management application program interface (API) [0037 and 0094] to generate management commands for the plurality of interface controllers; and a device manager to communicate with the plurality of interface controllers

It would have been obvious to one of ordinary skill at the time the invention was made that to implement Yang's pipeline configuration and utilizing API generate management commands for the plurality of interface controllers; and a device manager to communicate with the plurality of interface controllers

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for data access drives and transfer robotics into Dimitroff-Murotani's storage network system because doing so would provided improved communication with network devices using Yang's common user interface.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammara Peyton whose telephone number is (571) 272-4157. The examiner can normally be reached between 6:30 - 4:00 from Monday to Thursday, (I am off every first Friday), and 6:30-3:00 every second Friday. If attempts to reach the examiner by telephone are unsuccessful,

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the examiner's supervisor, Alford Kindred can be reached on (571) 272-4037.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272- 2100.

**TAMMARA PEYTON
PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to read 'Tammara Peyton', with a long horizontal flourish extending to the right.

Tammara Peyton

January 7, 2008